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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,509	09/28/2001	Andrzej Barwicz	60-06 US	2520

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EXAMINER	
CALEY, MICHAEL H	
ART UNIT	**PAPER NUMBER**
2871	

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/964,509	BARWICZ ET AL.	
	Examiner	Art Unit	
	Michael H. Caley	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 August 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,8,11,12,14,16,20-27,33,34,36,38-41,45-47,49 and 53-56* is/are rejected.

7)☒ Claim(s) *6, 7, 9, 10, 13, 15, 17-19, 28, 29, 30-32, 35, 42-44, 48, and 50-52* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 8, 11, 12, 14, 16, 20-27, 33, 34, 36, 38-41, 45-47, 49, and 53-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergmann et al. (U.S. Patent No. 6,377,730, hereinafter "Bergmann").

Regarding claim 1, Bergmann discloses a signal power and wavelength detector apparatus having:

a detector array having more detectors than a number of known channels (Column 2 lines 38-46);

an input port and a dispersive element within a waveguide structure, the dispersive element disposed for receiving light provided at the input port and for dispersing the light onto the detector array other than as channelised data within the known channels **(Column 5 lines 39-50)**; and,

an operator for transforming spectral data sensed by the detector array into values indicative of intensity of light within each of the predetermined wavelength ranges corresponding to the known channels (Column 2 lines 49-58).

Bergmann fails to disclose the method and steps of fabricating the optical component. Bergmann, however, discloses the apparatus and thus implicitly teaches the method of fabrication as proposed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have fabricated the optical component as proposed. The method of fabrication of the optical component would have been motivated by a need to provide the various components during the manufacturing process and to determine a transfer function to interpret the data from the detectors in order to realize the device disclosed by Bergmann. Such a method of fabrication would have been an advantageous and effective means of realizing a signal power and wavelength detector having exceptional signal detecting capabilities.

Regarding claim 2, Bergmann discloses the dispersive element as dispersing the light onto a plane in which the detector array is disposed adjacent the plane (Figure 2 elements 260 and 300).

Regarding claims 3, 25, and 55, Bergmann discloses the detector array as having detectors along a length substantially exceeding the length of the light within the known channels dispersed along the plane (Figure 3).

Regarding claims 4, 5, 8, 11, 26, 27, 30, 33, and 41, Bergmann discloses the operator as accounting for variations in construction from monitor to monitor by generating a predetermined set of output responses specific to each monitor (Column 8 lines 22-36; Column 7 lines 18-44). Such variations inherently include correction for tolerances in array placement, optical variations in the waveguide and included structures, and input port placement.

Regarding claim 12 and 34, the detector array disclosed by Bergmann is inherently positioned adjacent the plane for receiving most of the dispersed light dispersed while the component operates within any temperature within a predetermined temperature range.

Regarding claims 14 and 47, Bergmann discloses an embodiment in which the detector array comprises at least a number of detectors equal to three times the number of known channels (Column 8 lines 37-43).

Regarding claim 16, 39, 46, and 49, Bergmann discloses the dispersive element as an array waveguide grating (Column 4 lines 34-42).

Regarding claims 20, 21, 53, 54, and 56, Bergmann discloses the operator as determined by a digital signal processor associated with the optical component and comprised by the optical component (Column 7 lines 45-50).

Regarding claim 22, Bergmann discloses the operator as determined independently for each optical component (Column 7 lines 45-65).

Regarding claims 23 and 24, Bergmann discloses the optical component as an optical wavelength monitor.

Regarding claim 36, Bergmann discloses electrical coupling of the detector array for providing sensed data to a processor (Column 4 lines 60-67; Column 7 lines 45-50).

Regarding claim 38, Bergmann discloses the input endface and output endface as different endfaces (Figure 2).

Regarding claims 40 and 45, Bergmann discloses the input endface as coupling light into an unguided region of the dispersive element (Figure 2).

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bergmann in view of Zirngibl (U.S. Patent No. 5,745,616).

Bergmann discloses all of the proposed limitations except for the input endface and the output endface as the same endface. Zirngibl, however, teaches array waveguide gratings in which the input endface and output endface are constructed as the same endface to reduce the size of the grating structure (Column 2 lines 34-52).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have fabricated the optical component such that the input endface and the output endface are a same endface. Such an engineering expediency would have been advantageous to reduce the size of the grating and substrate and to allow for the input and output to be on the same side of the substrate. Incorporating techniques taught by Zirngibl into the design of the component disclosed by Bergmann would allow for optimizing placement and construction of the grating structure within an optical device.

Response to Arguments

Applicant's arguments filed 8/27/03 have been fully considered but they are not persuasive.

Regarding claims 1, 36, 41, and 56, Applicant asserts that Bergmann fails to disclose the method of "providing an input port and a dispersive element within a wave guide structure, the dispersive element disposed to receive light provided at the input port and for dispersing the light onto the detector array, the light dispersed other than as channelised data within the known channels." Applicant refers to Figure 2 and states that the illustrated wave guides are associated

with a respective optical signal obtained from the output star coupler and act to channelise the output from the star coupler to the array. The Examiner agrees that the waveguides (Figure 2 element 260) "act to channelise the output from the star coupler to the detector array", however, the light is not channelised within the known channels, but is instead channelised in a double density fashion, providing twice as many output channels as known channels (Column 5 lines 43-45).

In each of independent claims 1, 36, 41, and 56, Applicant proposes a "detector array having more detectors than a number of known channels" and "the light dispersed other than as channelised data within the known channels". Bergmann discloses twice as many detectors as known channels (Column 5 lines 43-45). Since Bergmann disperses the light over twice as many output waveguides and optical detectors as the number of known channels, it is apparent that Bergmann indeed disperses the light "other than as channelised data within the known channels" as worded in claims 1, 36, 41, and 56.

Figures 5-8 and Column 5 line 39 – Column 10 line 24 of Bergmann further disclose the method of providing the dispersed light as other than channelised data within the known channels and the means of interpreting the resulting electrical signals from the detector array as is similar to the method proposed by Applicant.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (703) 305-7913. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

mhc